**IN THE UNITED STATES DISTRICT COURT**
**FOR THE WESTERN DISTRICT OF TEXAS**
**WACO DIVISION**

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| DEMARAY LLC,<br><br>Plaintiff,<br><br>v.<br><br>INTEL CORPORATION,<br><br>Defendant. | Case No. 6:20-CV-00634-ADA<br><br>**JURY TRIAL DEMANDED** |

**DEFENDANT INTEL CORPORATION'S**
**FIRST AMENDED ANSWER AND AFFIRMATIVE DEFENSES**

Defendant Intel Corporation ("Intel") herein answers the Complaint filed by Plaintiff Demaray LLC ("Demaray") and states its affirmative defenses. Intel denies all allegations of the Complaint not explicitly admitted below.[1]

## ANSWER TO COMPLAINT

## THE PARTIES

1. Intel admits that Richard E. Demaray is listed as a named inventor on the face of U.S. Patent Nos. 7,544,276 ("the '276 patent") and 7,381,657 ("the '657 patent") (collectively, the "Patents-in-Suit"). Intel is without knowledge or information sufficient to form a belief as to the truth of the allegations of this paragraph, and therefore denies them.

2. Intel is without knowledge or information sufficient to form a belief as to the truth of the allegations of this paragraph, and therefore denies them.

[1] Any statements and admissions included herein reflect Intel's present understanding of the scope of the corresponding allegations and of terms used therein and/or in U.S. Patent Nos. 7,544,276 and 7,381,657 as those terms may be understood generally and presently understood by Intel.

3. Intel denies that it uses Demaray's patented technology. Intel is without knowledge or information sufficient to form a belief as to the truth of the remaining allegations of this paragraph, and therefore denies them.

4. Intel is without knowledge or information sufficient to form a belief as to the truth of the allegations of this paragraph, and therefore denies them.

5. Intel admits that Demaray's Complaint purports to attach uncertified copies of the '276 patent and '657 patent as Exhibits 1 and 2, respectively. Intel is without knowledge or information sufficient to form a belief as to the truth of the remaining allegations of this paragraph, and therefore denies them.

6. Intel admits that it is a corporation duly organized and existing under the laws of the State of Delaware, and has a place of business at 1300 South Mopac Expressway, Austin, Texas 78746. To the extent this paragraph recites a legal conclusion, no response is necessary. If a response is required, Intel denies this conclusion.

**JURISDICTION AND VENUE**

7. Intel admits that Demaray's Complaint purports to set forth an action arising under the patent laws of the United States, 35 U.S.C. § 1 *et seq*. Intel denies that there are factual or legal bases for the claims listed in the Complaint. Intel admits that this Court has subject matter jurisdiction over this action pursuant to 28 U.S.C. §§ 1331 and 1338(a).

8. For the limited purpose of this action only, Intel admits that it is subject to personal jurisdiction in the Western District of Texas.

9. For the limited purpose of this action only, Intel admits that it is subject to personal jurisdiction in the Western District of Texas, but denies the other allegations recited in this paragraph.

10. To the extent this paragraph recites a legal conclusion, no answer is required. To the extent that an answer is required, Intel denies that it makes, uses, sells, and/or offers to sell products or processes infringing the Patents-in-Suit and denies that the Western District of Texas is the most convenient venue to litigate this action. Intel admits that it has transacted and is continuing to transact business in the United States, including in the Western District of Texas.

## TECHNOLOGY BACKGROUND

11. Intel admits that semiconductor devices are generally manufactured using a series of process steps applied to a substrate, but denies the other allegations in this paragraph.

12. Intel admits that magnetron sputtering is one of many physical vapor deposition ("PVD") techniques and admits that magnetron sputtering can be carried out in a reactor with power being applied to a target. Intel is without knowledge or information sufficient to form a belief as to the truth of the remaining allegations of this paragraph, and therefore denies them.

13. Intel admits that the '276 patent states:

> Other approaches to providing a uniform condition of sputter erosion rely on creating a large uniform magnetic field or a scanning magnetic field that produces a time-averaged, uniform magnetic field. For example, rotating magnets or electromagnets can be utilized to provide wide areas of substantially uniform target erosion. For magnetically enhanced sputter deposition, a scanning magnet magnetron source can be used to provide a uniform, wide area condition of target erosion.
>
> As illustrated in FIG. 1A, apparatus 10 can include a scanning magnet magnetron source 20 positioned above target 12. An embodiment of a scanning magnetron source used for dc sputtering of metallic films is described in U.S. Pat. No. 5,855,744 to Halsey, et. al., (hereafter '744), which is incorporated herein by reference in its entirety. The '744 patent demonstrates the improvement in thickness uniformity that is achieved by reducing local target erosion due to magnetic effects in the sputtering of a wide area rectangular target. As described in the '744 patent, by reducing the magnetic field intensity at these positions, the local target erosion was decreased and the resulting film thickness nonuniformity was improved from 8%, to 4%, over a rectangular substrate of 400x500 mm.

'276 patent, 8:38-60. Intel admits that the '276 patent also states: "Target 12 functions as a cathode when power is applied to it and is equivalently termed a cathode. Application of power to target 12 creates a plasma 53. Substrate 16 is capacitively coupled to an electrode 17 through an insulator 54." '276 patent, 5:24-27. Intel is without knowledge or information sufficient to form a belief as to the truth of the remaining allegations of this paragraph, and therefore denies them.

14. Intel admits that the '276 patent states:

> In accordance with the present invention, a sputtering reactor apparatus for depositing oxide and oxynitride films is presented. Further, methods for depositing oxide and oxynitride films for optical waveguide devices are also presented. A sputtering reactor according to the present invention includes a pulsed DC power supply coupled through a filter to a target and a substrate electrode coupled to an RF power supply. A substrate mounted on the substrate electrode is therefore supplied with a bias from the RF power supply.
>
> The target can be a metallic target made of a material to be deposited on the substrate. In some embodiments, the metallic target is formed from Al, Si and various rare-earth ions. A target with an erbium concentration, for example, can be utilized to deposit a film that can be formed into a waveguide optical amplifier.
>
> A substrate can be any material and, in some embodiments, is a silicon wafer. In some embodiments, RF power can be supplied to the wafer. In some embodiments, the wafer and the electrode can be separated by an insulating glass.
>
> In some embodiments, up to about 10 kW of pulsed DC power at a frequency of between about 40 kHz and 350 kHz and a reverse pulse time of up to about 5μs is supplied to the target. The wafer can be biased with up to about several hundred watts of RF power. The temperature of the substrate can be controlled to within about 10° C. and can vary from about -50° C. to several hundred degrees C. Process gasses can be fed into the reaction chamber of the reactor apparatus. In some embodiments, the process gasses can include combinations of Ar, $N_2$, $O_2$, $C_2F_6$, $CO_2$, CO and other process gasses.

'276 patent, 2:45-3:7. Intel admits that the '276 patent also states: "However, both RF and pulsed DC deposited films are not fully dense and most likely have columnar structures. These columnar structures are detrimental for optical wave guide applications due to the scattering loss caused by the structure. By applying a RF bias on wafer 16 during deposition, the deposited film can be

dandified by energetic ion bombardment and the columnar structure can be substantially eliminated." '276 patent, 5:60-67. Intel is without knowledge or information sufficient to form a belief as to the truth of the remaining allegations of this paragraph, and therefore denies them.

15. Intel admits that the '276 patent states: "The process gas utilized in reactor 10 includes an inert gas, typically argon, used as the background sputtering gas. Additionally, with some embodiments of target 12, reactive components such as, for example, oxygen may be added to the sputtering gas. Other gasses such as $N_2$, $NH_3$, CO, NO, $CO_2$, halide containing gasses other gas-phase reactants can also be utilized." '276 patent, 8:61-67. Intel is without knowledge or information sufficient to form a belief as to the truth of the remaining allegations of this paragraph, and therefore denies them.

**FIRST CLAIM**

16. Paragraph 16 does not contain an allegation of fact, and, therefore, no answer is required. Intel incorporates by reference its answers to the allegations in Paragraphs 1-15 of the Complaint.

17. Intel admits that the '276 patent is titled "Biased pulse DC reactive sputtering of oxide films" and that it issued on June 9, 2009. Intel admits that the Complaint attaches an uncertified copy of the '276 patent as Exhibit 1. Intel denies the remaining allegations of this paragraph.

18. Intel admits that the face of the '276 patent lists Hongmei Zhang, Mukundan Narasimhan, Ravi B. Mullapudi, and Richard E. Demaray as co-inventors.

19. The allegations in this paragraph regarding the force and effect of the '276 patent are legal conclusions and therefore require no response. To the extent a response is required, Intel is without knowledge or information sufficient to form a belief as to the truth of these allegations,

and therefore denies them. Intel is without knowledge or information sufficient to form a belief as to the truth of the remaining allegations of this paragraph, and therefore denies them.

20. Intel admits that the '276 patent states: "The present invention relates to deposition of oxide and oxynitride films and, in particular, to deposition of oxide and oxynitride films by pulsed DC reactive sputtering." '276 patent, 1:12-14. Intel denies the remaining allegations in this paragraph.

21. Intel admits that the '276 patent states: "a substrate electrode coupled to an RF power supply. A substrate mounted on the substrate electrode is therefore supplied with a bias from the RF power supply." '276 patent, 2:51-53. Intel denies the remaining allegations in this paragraph.

22. Intel denies the allegations in this paragraph.

23. Intel denies the allegations in this paragraph.

**["1. A reactor according to the present invention, comprising:"][2]**

24. Intel denies the allegations in this paragraph.

25. Intel admits that it uses RMS reactors for deposition of layers in its semiconductor products. Intel admits that it has identified Applied Materials, Inc. as a Preferred Quality Supplier. Intel is without knowledge or information sufficient to form a belief as to the truth of the remaining allegations of this paragraph, and therefore denies them.

26. Intel denies the allegations in this paragraph.

**["a target area for receiving a target;"]**

27. Intel denies the allegations in this paragraph.

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[2] Intel denies all allegations in Demaray's headings or subheadings.

28. Intel admits that the document available at the link https://www.appliedmaterials.com/resources/glossary states: "[i]n PVD, the target is the source of the material to be deposited. Atoms are ejected from the target as a result of the bombardment of energetic particles." Intel denies the remaining allegations in this paragraph.

29. Intel is without knowledge or information sufficient to form a belief as to the truth of the allegations of this paragraph, and therefore denies them.

**["a substrate area opposite the target area for receiving a substrate;"]**

30. Intel denies the allegations in this paragraph.

31. Intel admits that the document available at the link https://www.appliedmaterials.com/resources/glossary states: "[t]he material upon which thin films are manipulated. Silicon is most commonly used for semiconductors . . . ." Intel denies the remaining allegations in this paragraph.

32. Intel is without knowledge or information sufficient to form a belief as to the truth of the allegations of this paragraph, and therefore denies them.

**["a pulsed DC power supply coupled to the target area, the pulsed DC power supply providing alternating negative and positive voltages to the target;"]**

33. Intel denies the allegations in this paragraph.

34. Intel denies the allegations in this paragraph.

35. Intel is without knowledge or information sufficient to form a belief as to the truth of the allegations of this paragraph, and therefore denies them.

**["an RF bias power supply coupled to the substrate;"]**

36. Intel denies the allegations in this paragraph.

37. Intel is without knowledge or information sufficient to form a belief as to the truth of the allegations of this paragraph, and therefore denies them.

38. Intel is without knowledge or information sufficient to form a belief as to the truth of the allegations of this paragraph, and therefore denies them.

**["and a narrow band-rejection filter that rejects at a frequency of the RF bias power supply coupled between the pulsed DC power supply and the target area."]**

39. Intel denies the allegations in this paragraph.

40. Intel denies the allegations in this paragraph.

**SECOND CLAIM**

41. Paragraph 41 does not contain an allegation of fact, and, therefore, no answer is required. Intel incorporates by reference its answers to the allegations in Paragraphs 1-40 of the Complaint.

42. Intel admits that the '657 patent is titled "Biased pulse DC reactive sputtering of oxide films" and that it issued on June 3, 2008. Intel admits that the Complaint attaches an uncertified copy of the '657 patent as Exhibit 2. Intel denies the remaining allegations in this paragraph.

43. Intel admits that the face of the '657 patent lists Hongmei Zhang, Mukundan Narasimhan, Ravi B. Mullapudi, and Richard E. Demaray as co-inventors.

44. The allegations in this paragraph regarding the force and effect of the '657 patent are legal conclusions and therefore require no response. To the extent a response is required, Intel is without knowledge or information sufficient to form a belief as to the truth of these allegations, and therefore denies them. Intel is without knowledge or information sufficient to form a belief as to the truth of the remaining allegations of this paragraph, and therefore denies them.

45. Intel admits that the '657 patent states: "The present invention relates to deposition of oxide and oxynitride films and, in particular, to deposition of oxide and oxynitride films by pulsed DC reactive sputtering." '657 patent, 1:11-13. Intel denies the remaining allegations in this paragraph.

46. Intel admits that the '657 patent states: "A sputtering reactor according to the present invention includes a pulsed DC power supply coupled through a filter to a target and a substrate electrode coupled to an RF power supply. A substrate mounted on the substrate electrode is therefore supplied with a bias from the RF power supply." '657 patent, 2:49-54. Intel denies the remaining allegations in this paragraph.

47. Intel denies the allegations in this paragraph.

48. Intel denies the allegations in this paragraph.

**["A method of depositing film on an insulating substrate, comprising:"]**

49. Intel denies the allegations in this paragraph.

50. Intel admits that it deposits certain TaN and/or TiN layers for certain of its Broadwell Processors, which are fabricated using silicon wafers. Intel denies the remaining allegations in this paragraph.

**["providing a process gas between a conductive target and the substrate;"]**

51. Intel admits that it fabricates semiconductor products in part by using a process gas, a target, and a substrate. Intel denies the remaining allegations in this paragraph.

52. Intel admits that it uses an RMS reactor in the fabrication of TaN layers for at least some of its Core M 5Y70/5Y10 14 nm Gen 2 Broadwell Processors. Intel admits that in some processes it uses nitrogen gas. Intel denies the remaining allegations in this paragraph.

53. Intel admits that it uses a process gas including nitrogen, a tantalum target, and a silicon substrate in certain of its processes. Intel denies the remaining allegations in this paragraph.

**["providing pulsed DC power to the target through a narrow band rejection filter such that the target alternates between positive and negative voltages;"]**

54. Intel admits that it fabricates semiconductor products. Intel does not know what meaning Demaray is ascribing to "providing pulsed DC power to the target through a narrow band rejection filter such that the target alternates between positive and negative voltages," and therefore denies the remaining allegations in this paragraph.

55. Intel admits that it uses an RMS reactor in the fabrication of TaN layers for at least some of its Core M 5Y70/5Y10 14 nm Gen 2 Broadwell Processors. Intel is without knowledge or information sufficient to form a belief as to the truth of the remaining allegations of this paragraph, and therefore denies them.

56. Intel is without knowledge or information sufficient to form a belief as to the truth of the allegations of this paragraph, and therefore denies them.

57. Intel denies the allegations in this paragraph.

**["providing an RF bias at a frequency that corresponds to the narrow band rejection filter to the substrate;"]**

58. Intel admits that it fabricates semiconductor products. Intel does not know what meaning Demaray is ascribing to "providing an RF bias at a frequency that corresponds to the narrow band rejection filter to the substrate," and therefore denies the remaining allegations in this paragraph.

59. Intel admits that it uses an RMS reactor in the fabrication of TaN layers for at least some of its Core M 5Y70/5Y10 14 nm Gen 2 Broadwell Processors. Intel denies the remaining allegations in this paragraph.

60. Intel is without knowledge or information sufficient to form a belief as to the truth of the allegations of this paragraph, and therefore denies them.

**["providing a magnetic field to the target;"]**

61. Intel admits that it fabricates semiconductor products. Intel admits that a magnetic field is provided at certain times during fabrication of certain products. Intel denies the remaining allegations in this paragraph.

62. Intel admits that it uses an RMS reactor in the fabrication of TaN layers for at least some of its Core M 5Y70/5Y10 14 nm Gen 2 Broadwell Processors. Intel denies the remaining allegations in this paragraph.

63. Intel admits that page 9 of Exhibit 5 to the Complaint contains an image with a red box and the word "Magnetron" next to it. Intel is without knowledge or information sufficient to form a belief as to the truth of the remaining allegations of this paragraph, and therefore denies them.

**["and reconditioning the target;"]**

64. Intel admits that it fabricates semiconductor products. Intel denies the remaining allegations in this paragraph.

65. Intel admits that it uses an RMS reactor in the fabrication of TaN layers for at least some of its Core M 5Y70/5Y10 14 nm Gen 2 Broadwell Processors. Intel denies the remaining allegations in this paragraph.

**["wherein reconditioning the target includes reactive sputtering in the metallic mode and then reactive sputtering in the poison mode."]**

66. Intel admits that it fabricates semiconductor products. Intel denies the remaining allegations in this paragraph.

67. Intel admits that it uses an RMS reactor in the fabrication of TaN layers for at least some of its Core M 5Y70/5Y10 14 nm Gen 2 Broadwell Processors. Intel denies the remaining allegations in this paragraph.

68. Intel admits that, as of the filing of the Complaint, it has knowledge of the Patents-in-Suit. Intel denies the remaining allegations in this paragraph.

69. Intel denies the allegations in this paragraph.

70. Intel denies the allegations in this paragraph.

71. Intel denies the allegations in this paragraph.

## ANSWER TO PRAYER FOR RELIEF

72. Intel denies that is it liable for any relief requested in the Prayer for Relief, including that requested in subparagraphs A though H. Intel has not directly, indirectly, literally and/or by the doctrine of equivalents infringed the Patents-in-Suit. Demaray is not entitled to any relief in this action, either as requested in its Complaint or otherwise.

73. Intel further denies all allegations in Demaray's Complaint to which it has not specifically responded.

## INTEL'S AFFIRMATIVE DEFENSES

Intel asserts the following affirmative defenses as a response to the allegations in Demaray's Complaint. To the extent any of these defenses, in whole or in part, relates to or negates an element of Demaray's claims, Intel in no way seeks to relieve Demaray of its burden of proof or persuasion on that element.

**First Affirmative Defense**
**(Failure to State a Claim)**

74. Demaray's Complaint fails to state a claim upon which relief can be granted.

**Second Affirmative Defense**
**(Noninfringement)**

75. Intel has not infringed and does not infringe (not directly, contributorily, or by inducement), either literally or under the doctrine of equivalents, any claim of the Patents-in-Suit.

**Third Affirmative Defense**
**(Patent Invalidity)**

76. The claims of the Patents-in-Suit are invalid because they do not satisfy the requirements of 35 U.S.C. § 100, *et seq.*, including but not limited to: 35 U.S.C. §§ 101, 102, 103, 112 and/or 116.

**Fourth Affirmative Defense**
**(Prosecution History Estoppel / Prosecution Disclaimer)**

77. Demaray's claims are barred by the doctrines of prosecution history estoppel and/or prosecution disclaimer.

78. During prosecution of the Patents-in-Suit, the patent application from which the Patents-in-Suit claim priority (U.S. Patent Application No. 10/101,863 ("the '863 Application)), and the other patent applications related to the Patents-in-Suit, the United States Patent and Trademark Office ("USPTO") Examiners made multiple rejections in view of the prior art of record. The Patentees made arguments, amendments, admissions, representations, and statements during those prosecutions to overcome those rejections.

79. For example, during prosecution of the '863 Application, in response to a February 24, 2004 Non-Final Rejection, the Patentees made arguments regarding "pulsed DC power supply" in their July 23, 2004 response.

80. Demaray is estopped from construing the claims of the Patents-in-Suit to cover or include, either literally or by the doctrine of equivalents, accused products or methods that were surrendered because of arguments, amendments, admissions, representations, and/or statements made before the USPTO during prosecution.

**Fifth Affirmative Defense**
**(Ensnarement)**

81. Demaray's claims are barred or limited by the doctrine of ensnarement.

**Sixth Affirmative Defense**
**(Plaintiff's License and/or Exhaustion of Rights)**

82. To the extent any products accused by way of the Complaint are subject to a license for any of the Patents-in-Suit, or to the extent Demaray has otherwise exhausted its rights in the Patents-in-Suit, Demaray's claims are barred, in whole or in part.

83. On information and belief, Dr. Demaray was a general manager of Applied Komatsu Technology, Inc., developing sputtered silicon deposition technology for flat panel displays. On information and belief, Dr. Demaray, and other employees working with Dr. Demaray, were working in Northern California and were employed by either Applied Komatsu Technology, Inc.'s ("AKT") subsidiary, Applied Komatsu Technology America Inc. ("AKTA") (AKT and AKTA collectively, "Applied Komatsu"), or by Applied Materials, Inc. ("Applied").

84. On information and belief, Dr. Demaray, along with several other colleagues from Applied and/or Applied Komatsu left in late 1998 to start a new company, Symmorphix. On information and belief, Dr. Demaray was a founder and the CTO of Symmorphix.

85. On information and belief, at Symmorphix, Dr. Demaray and his team of former Applied and/or Applied Komatsu employees continued to develop the technology they worked on at Applied and/or Applied Komatsu related to sputtered silicon deposition technology, including

methods of sputtering using varying frequencies of RF in order to produce denser dielectric films for optical components, such as optical waveguides.

86. On information and belief, on December 11, 1998, Applied Komatsu and Symmorphix executed a Sale and Relationship Agreement, under which Symmorphix would purchase two Applied Komatsu systems and continue using the Applied Komatsu facilities to operate the equipment. Pursuant to the Sale and Relationship Agreement, Applied Komatsu provided Symmorphix with access to Applied Komatsu facilities through and including April 30, 1999. On information and belief, on April 30, 1999, Applied Komatsu executed a First Addendum to the Sale and Relationship Agreement, which extended the period of Symmorphix's access to Applied Komatsu facilities to continue from April 30, 1999, to July 31, 1999. On information and belief, on July 28, 1999, Applied Komatsu executed a Second Addendum to the Sale and Relationship Agreement, which extended the period of Symmorphix's access to Applied Komatsu facilities to continue from July 31, 1999, to September 30, 1999. Symmorphix continued using the Applied Komatsu facilities and equipment at least until September 30, 1999.

87. On information and belief, the Sale and Relationship Agreement provided that "[t]he parties have agreed to certain provisions regarding future dealings, intellectual property, confidential information, and licenses, as described in Exhibit C." On information and belief, on January 29, 1999, Applied Komatsu and Symmorphix executed an amended Exhibit C to the Sale and Relationship Agreement which modified the December 11, 1998 version:

> THIS MODIFIED VERSION OF EXHIBIT C IS EFFECTIVE ON THE DATE SIGNED ON BEHALF OF [APPLIED KOMATSU] AND SYMMORPHIX, AND SUPERCEDES THE VERSION ATTACHED TO THE SALE AND RELATIONSHIP AGREEMENT DATED 12/11/98.

88. On information and belief, the Amended Exhibit C included a license grant from Symmorphix to Applied Komatsu, including for "inventions, improvements, or enhancements

developed by Symmorphix relating to sputtered silicon deposition technology"—the technology embodied in the Patents-in-Suit. Further, the license grant also expressly permitted Applied Komatsu to transfer or assign such license grant to Applied, and expressly allowed Applied Komatsu's customers to use such inventions as well:

> To the extent required by existing [Applied Komatsu] Employee Agreements with any Symmorphix personnel, Symmorphix grants to [Applied Komatsu] a non-assignable, non-transferable, non-exclusive, perpetual, royalty-free license to any rights of Symmorphix under any patents issued based on any patent application files for inventions, improvements, or enhancements developed by Symmorphix relating to sputtered silicon deposition technology, provided that [Applied Komatsu] shall not utilize such rights to pursue a business of providing Services. Notwithstanding the generality of the foregoing, [Applied Komatsu] shall be authorized to assign or transfer any or all of the above license to one or more of [Applied Komatsu's] parent entities, with the same restriction on competition with the Services provided by Symmorphix, and [Applied Komatsu's] customers may use equipment provided by [Applied Komatsu] incorporating inventions licensed to [Applied Komatsu] hereunder without further consideration.

89. On March 16, 2002, the '863 Application was filed naming Richard E. Demaray, Hongmei Zhang, Mukundan Narasimhan, and Ravi Mullapudi as named inventors.

90. On October 1, 2004, U.S. Patent Application No. 10/954,182 was filed as a continuation application of the '863 Application naming Richard E. Demaray, Hongmei Zhang, Mukundan Narasimhan, and Ravi Mullapudi as named inventors. On June 3, 2008, this application issued as the '657 patent.

91. On September 16, 2005, U.S. Patent Application No. 11/228,834 was filed as a divisional application of the '863 Application naming Richard E. Demaray, Hongmei Zhang, Mukundan Narasimhan, and Ravi Mullapudi as named inventors. On June 9, 2009, this application issued as the '276 patent.

92. On information and belief, all four named inventors had executed Employee Agreements with Applied or Applied Komatsu.

93. On information and belief, one or more of the named inventors has the following assignment provision in their Applied Komatsu Employee Agreement:

> In case any invention is described in a patent application or is disclosed to third parties by me after terminating my employment with [Applied Komatsu], it is presumed that the invention was conceived or made during the period of my employment for [Applied Komatsu], and the invention will be assigned to [Applied Komatsu] as provided by this Agreement, provided it relates to my work with [Applied Komatsu] or any of its subsidiaries.

94. On information and belief, Applied Komatsu and Symmorphix executed the Sale and Relationship Agreement and an Amended Exhibit C, agreeing that Symmorphix grants Applied Komatsu a perpetual, royalty-free license to Symmorphix's patents "based on any patent applications filed for inventions, improvements, or enhancements developed by Symmorphix relating to sputtered silicon deposition technology[.]" On their face, both Patents-in-Suit relate to sputtered silicon deposition technology. Further, on information and belief, pursuant to Amended Exhibit C, Applied Komatsu is authorized to assign or transfer its license to any of Applied Komatsu's parent entities, including Applied. Moreover, on information and belief, the amended agreement provides "[Applied Komatsu's] customers may use equipment provided by [Applied Komatsu] incorporating inventions licensed to [Applied Komatsu] hereunder without further consideration."

95. On information and belief, the license grant explains that it applies "[t]o the extent required by existing [Applied Komatsu] Employee Agreements with any Symmorphix personnel." On information and belief, one or more of the Applied Komatsu Employee Agreements with the named inventors contains the following provision:

> In case any invention is described in a patent application or is disclosed to third parties by me after terminating my employment with [Applied Komatsu], it is presumed that the invention was conceived or made during the period of my employment for [Applied Komatsu], and the invention will be assigned to [Applied Komatsu] as provided by this Agreement, provided it relates to my work with [Applied Komatsu] or any of its subsidiaries.

96. On information and belief, the Amended Exhibit C granted Applied Komatsu a perpetual royalty-free license to Symmorphix's patents relating to sputtered silicon deposition technology. On their face, both Patents-in-Suit relate to sputtered silicon deposition technology, and on information and belief, all four named inventors are former Applied and/or Applied Komatsu employees. On information and belief, Applied is a parent entity of Applied Komatsu. On information and belief, under the terms of Amended Exhibit C, Applied has a perpetual, royalty-free license to the Patents-in-Suit. On information and belief, in turn, Intel—as a customer of Applied—also has a license.

**Seventh Affirmative Defense**
**(Limitation on Damages)**

97. Demaray's claims for damages, if any, against Intel for alleged infringement of the Patents-in-Suit are limited by 35 U.S.C. §§ 286, 287, and/or 288.

**Eighth Affirmative Defense**
**(Lack of Standing and Failure to Join Co-Owner)**

98. Intel restates and incorporates by reference paragraphs 83 through 96 as if fully set forth herein.

99. Demaray cannot proceed in an infringement action without joining all co-owners.

100. On information and belief, certain named inventors of the Patents-in-Suit assigned their rights to Applied and/or Applied Komatsu, making these entities co-owners. Demaray did not join these co-owners in its action against Intel.

101. For example, on information and belief, Mr. Narasimhan, one of the named inventors of the Patents-in-Suit, left Applied to join Symmorphix on April 16, 2001. On information and belief, Mr. Narasimhan's Applied Employment Agreement contains the following assignment provision:

> In case any invention is described in a patent application or is disclosed to third parties by me within one (1) year after terminating my employment with APPLIED, it is to be presumed that the invention was conceived or made during the period of my employment for APPLIED, and the invention will be assigned to APPLIED as provided by this Agreement, provided it relates to my work with APPLIED or any of its subsidiaries.

102. On information and belief, on March 16, 2002, the '863 Application, the parent application to the Patents-in-Suit, was filed naming Mr. Narasimhan as one of the named inventors. On information and belief, the '863 Application was filed less than one year after Mr. Narasimhan's termination from Applied. On information and belief, at Symmorphix, the named inventors of the '863 Application continued developing work from their time at Applied and/or Applied Komatsu related to sputtered silicon deposition technology.

103. On information and belief, Mr. Narasimhan's Applied Employee Agreement further provides:

> I agree that all inventions, copyrightable works and confidential information (including but not limited to new contributions, improvements, ideas or discoveries, whether patentable or not and computer source code or documentation) produced, conceived, made or first actually reduced to practice by me solely or jointly with others during the period of my employment with APPLIED (the foregoing are subsequently referred to as Creative Works), are hereby assigned to APPLIED and shall be the exclusive property of APPLIED.

104. On information and belief, the Sale and Relationship Agreement between Applied Komatsu and Symmorphix explains that it applies "[t]o the extent required by existing [Applied Komatsu] Employee Agreements with any Symmorphix personnel." On information and belief, Mr. Narasimhan was an employee of Applied, not an employee of Applied Komatsu.

105. On information and belief, the Sale and Relationship Agreement did not amend Mr. Narasimhan's assignment obligations to Applied and Applied's Employee Agreement with Mr. Narasimhan bestowed an automatic assignment of Mr. Narasimhan's ownership rights in the Patents-in-Suit to Applied.

106. In the alternative, if Demaray contends that the Sale and Relationship Agreement does not convey a perpetual royalty-free license to the Patents-in-Suit, on information and belief, Applied would have an assignment interest in the Patents-in-Suit. On information and belief, at Symmorphix, Dr. Demaray and the other named inventors continued developing work from their time at Applied Komatsu related to sputtered silicon deposition technology.

107. On information and belief, under the terms of the Applied Komatsu Employee Agreement with at least one of the named inventors:

> In case any invention is described in a patent application or is disclosed to third parties by me after terminating my employment with [Applied Komatsu], it is presumed that the invention was conceived or made during the period of my employment for [Applied Komatsu], and the invention will be assigned to [Applied Komatsu] as provided by this Agreement, provided it relates to my work with [Applied Komatsu] or any of its subsidiaries.

108. The Applied Komatsu Employee Agreement further specifically provides:

> I agree that all inventions, copyrightable works and confidential information (including but not limited to new contributions, improvements, ideas or discoveries, whether patentable or not and computer source code or documentation) produced, conceived, made or first actually reduced to practice by me solely or jointly with others during the period of my employment with APPLIED (the foregoing are subsequently referred to as Creative Works), are hereby assigned to APPLIED and shall be the exclusive property of APPLIED.

109. Thus, on information and belief, if the Sale and Relationship Agreement did not convey a perpetual royalty-free license to the Patents-in-Suit, the Applied Komatsu Employee Agreement bestowed an automatic assignment of at least one or more of the named inventors' ownership rights in the Patents-in-Suit to Applied Komatsu.

110. On information and belief, Demaray lacks standing to bring this action because it has failed to join co-owner(s) of the Patents-in-Suit—Applied and/or Applied Komatsu.

**Ninth Affirmative Defense**
**(Inconvenient Venue)**

111. Pursuant to 28 U.S.C. § 1404, venue in the Western District of Texas is inconvenient for Intel.

**Tenth Affirmative Defense**
**(Statute of Limitations)**

112. Under 35 U.S.C. § 286, Demaray may not recover damages for any alleged infringement that occurred more than six years prior to the commencement of this action.

**Eleventh Affirmative Defense**
**(Government Sale)**

113. Under 28 U.S.C. § 1498, Demaray's claims are barred to the extent that they relate to use or manufacture of the technology described in the Patents-in-Suit by or for the United States.

114. Depending on the scope of Demaray's infringement allegations and claim for damages, Demaray's claims may be barred insofar as Intel is contracted by the United States government to provide processors that Demaray alleges are made using allegedly infringing RMS reactors. In such circumstances, 28 U.S.C. § 1498 recites that the patent "owner's remedy shall be by action against the United States in the United States Court of Federal Claims for the recovery of his reasonable and entire compensation for such use and manufacture."

**Twelfth Affirmative Defense**
**(No Double Compensation)**

115. The relief sought by Demaray is limited, in whole or in part, by any compensation received or sought by Demaray for its alleged patent rights from entities whose products incorporate any accused Intel products.

116. For example, the relief sought by Demaray is limited, in whole or in part, by any compensation received or sought by Demaray for its alleged patent rights from Applied.

117. On information and belief, Demaray alleges that Intel infringes the Patents-in-Suit by using Applied reactors. *See* Dkt. 1 ¶ 7. On information and belief, Applied has filed a declaratory judgment action against Demaray in the United States District Court for the Northern District of California, Case No. 5:20-cv-05676, seeking *inter alia*, a declaration that Applied does not infringe the Patents-in-Suit. *See, e.g.*, *Applied Materials, Inc. v. Demaray LLC*, No. 5:20-cv-05676, Dkt. 13 at 16-17 (N.D. Cal.). Accordingly, to the extent that Demaray countersues against Applied for infringement of the Patents-in-Suit and/or asserts an affirmative defense against Applied for infringement of the Patents-in-Suit in Applied's declaratory judgment action, any relief sought by Demaray against Intel in this action is limited, in whole or in part, by any compensation received or sought by Demaray for its alleged patents rights from Applied.

118. As another example, the relief sought by Demaray is limited, in whole or in part, by any compensation received or sought by Demaray for its alleged patent rights from Samsung Electronics Co., Ltd.; Samsung Electronics America, Inc.; Samsung Semiconductor, Inc.; and Samsung Austin Semiconductor, LLC (collectively, "Samsung Defendants").

119. On information and belief, Demaray has sued the Samsung Defendants in Case No. 6:20-cv-00636-ADA in the United States District Court for the Western District of Texas, alleging infringement of the Patents-in-Suit. On information and belief, Intel processors are incorporated into certain Samsung products. Accordingly, the relief sought by Demaray against Intel in this action is limited, in whole or in part, by any compensation received or sought by Demaray for its alleged patent rights from the Samsung Defendants based on any products incorporating any accused Intel products.

## RESERVATION OF DEFENSES

Intel reserves all affirmative defenses under Rule 8(c) of the Federal Rules of Civil Procedure, the Patent Laws of the United States, and any other defenses, at law or in equity, that may now exist or in the future be available based on discovery and future factual investigation.

## DEMAND FOR JURY TRIAL

Intel demands a jury trial on all triable issues.

Dated: October 13, 2020

By: */s/ J. Stephen Ravel*

J. Stephen Ravel
Texas State Bar No. 16584975
KELLY HART & HALLMAN LLP
303 Colorado, Suite 2000
Austin, Texas 78701
Tel: (512) 495-6429
Email: steve.ravel@kellyhart.com

*Attorney for Intel Corporation*

**CERTIFICATE OF SERVICE**

The undersigned certifies that on October 13, 2020 all counsel of record who are deemed to have consented to electronic service are being served with a copy of this document via the Court's CM/ECF system.

*/s/ J. Stephen Ravel*
J. Stephen Ravel